Dealing with negative reviews on physician-rating websites: An experimental test of how physicians can prevent reputational damage via effective response strategies

Florian Arendt [a,*], Michaela Forrai [a], Oliver Findl [b]

[a] Department of Communication, University of Vienna, Vienna, Austria
[b] Hanusch Hospital, Vienna, Austria

1. Introduction

The healthcare landscape has been undergoing rapid change as patients become more actively involved in health-related decision-making. Online health information-seeking is especially important in this regard as it has become increasingly popular among patients (Li et al., 2019). However, concerns have been raised that online health information-seeking may negatively contribute to how patients perceive physicians (Tan and Goonawardene, 2017). Whereas an increasing number of patients ask "Dr. Google" (e.g., Arendt et al., 2020), or use, produce, and share health-related content on social networking sites (e. g., Arendt et al., 2019), physician-rating websites (PRWs) such as Vitals, Healthgrades, or RateMDs in the USA, or DocFinder in Austria have been gaining in popularity. Rather than solely relying on recommendations from family members and friends, more and more Internet users are turning to PRWs before choosing a physician (Li et al., 2019).

PRWs use patient reviews to evaluate and rank physicians. Importantly, these reviews are based on patients' subjective interpretations of how well—in terms of factors such as perceived competence or friendliness—a physician and/or his/her staff provide(s) treatment or care. As Gao et al. (2012) summarized, advocates argue that PRWs will provide consumers with much-needed information about physicians' quality from the consumer experience perspective—similar to user-submitted reviews about restaurants, hotels, or books—, and make greater use of patient feedback, possibly positively contributing to patient empowerment. Conversely, critics worry that PRWs are a forum for disgruntled patients to vent their frustration, partly over minor shortcomings, and that even a small number of such ratings might already tarnish a given physician's reputation. Interestingly, regarding the latter, similar arguments have been made in the debate about online hate speech in the political realm (e.g., against political opponents or social minority groups; see Gagliardone et al., 2015). Thus, some undampened reviews filled with hatred may be written without them having any actual basis in terms of the real physicians' behavior. Therefore, it comes as no surprise that PRWs are a major factor of concern for physicians (Jain, 2010; Menon, 2017).

Previous research has already acknowledged the importance of PRWs. One line of research, for example, has asked whether subjective reviews on PRWs correspond to the actual quality of care—an important question to assess the quality of the argument put forward by advocates of such services (see above). In this regard, Chen et al. (2018) found that reviewer ratings poorly represented the values of patient satisfaction when compared to a validated survey instrument. Similarly, Widmer et al. (2018) also found that online physician reviews did not accurately reflect patient satisfaction survey scores.

Although many reviews paint a rather positive picture of physicians (Kadry et al., 2011), there are also negative reviews. Previous research has addressed their possible influence on patients' beliefs about the physician such as a PRW user's willingness to choose the reviewed physician (Li et al., 2015). Importantly, Li et al. (2015) found that reading negative reviews led to more negative beliefs about the physician, including a reduced willingness to use the physician's services. Thus, physicians' concerns that such negative reviews may tarnish their reputation seem to be supported by empirical evidence.

PRWs offer physicians the possibility of reacting to negative reviews. Unfortunately, it is unknown as to how physicians can react effectively to negative reviews. Assuming that at least some of the negative reviews are from disgruntled patients to vent their frustration, as noted above, it

* Corresponding author. Department of Communication, University of Vienna, Währinger Straße 29, 1090, Vienna, Austria.
E-mail address: florian.arendt@univie.ac.at (F. Arendt).

is important to know whether there are effective response strategies that physicians can apply to prevent reputational damage. This is the focus of the present experimental study that provides empirical evidence for the effectiveness of specific response strategies. Importantly, evidence-based action recommendations for physicians should be supported by scientific evidence from empirical research rather than being based on personal preferences and unscientific experience (Coombs, 2007; Rousseau, 2006). The findings from the present study allow us to formulate evidence-based action recommendations, describing how physicians can maximize reputational protection when being confronted with (possibly unjustified) negative reviews.

1.1. Negative reviews as a state of crisis

According to situational crisis communication theory (Coombs, 2007), a crisis can be perceived as a threat to an organization's reputation that can affect how stakeholders (e.g., future potential patients) interact with the organization (e.g., the physician's practice consisting of the physician and his/her staff). Reputational threat (e.g., negative beliefs about a physician) can thus be seen as the primary outcome of a crisis. Importantly, a crisis can trigger negative emotions as well: In fact, Coombs (2007) argued that negative emotions can operate on a "parallel track" (p. 169) to reputation and thus can affect behavior intentions (e.g., intentions to visit the physician) as well. He argued that a crisis can generate feelings of anger (Coombs and Holladay, 2005). His theorizing posits that the more negative the reputation, the less likely stakeholders are to show behaviors (or behavior intentions) that are supportive of an organization (Coombs, 2007). In addition, negative emotions such as anger may cause stakeholders to lash out at an organization by engaging in negative word of mouth (Coombs and Holladay, 2004). Thus, both reputational threat and anger are assumed to sever interactions with the organization.

Consistent with this idea, we conceptualized a crisis situation in which a negative review (possibly) leads to reputational damage as indicated by negative beliefs about the physician. As a secondary outcome, we also focused on anger. Thus, both reputation (beliefs) and anger (emotion) are assumed to be two important outcomes of crises with reputational damage being the primary focus of attention.

There are different types of crises (Coombs, 2007). First, a physician may be confronted with a *victim crisis*, for example, based on rumor, when false and damaging information about an organization is being circulated. As already noted, some reviews may be written by disgruntled patients to vent their frustration—with no or only a very limited basis in actual events. Second, a physician may be confronted with an *accidental crisis*, for example, when a technology or equipment failure causes an accident. Third, a physician may be confronted with a *preventable crisis* in which, for example, human error causes an accident such as an incorrect diagnosis or inappropriate treatment recommendations by the physician. Such a crisis potentially places patients (knowingly or unknowingly) at risk. It is also possible that an organization may be operating in an inappropriate manner such as with organizational problems (e.g., long, unjustified waiting times) or with unfriendly staff and physicians.

What is important in this regard is the limited ability of the readers of (often anonymous) negative online reviews—users of PRWs who may look for a physician and are thus potentially future patients—to evaluate whether the accusation in the negative review corresponds to the truth or not. Thus, it is more or less unclear whether the physician and/or his/her staff is/are responsible for the things outlined in the accusation: Is the reviewer a victim, was it an accident, or was it preventable? Given the absence of in-depth information, we perceive such negative review crises as a state of high ambiguity in terms of the attribution of responsibility.

Despite this uncertainty, it seems relevant to determine how physicians can effectively react to such crises via strategic communication (see Falkheimer and Heide, 2018). Situational crisis communication

theory (Coombs, 2007) groups response strategies into three broad categories: First, *deny strategies* attempt to remove any connection between the physician and the content of the negative review. Physicians can argue that there is no "real" crisis; that is, the review is inaccurate. If (and only if) readers of the review (i.e., potential future patients) accept this denial, can the physician be spared any reputational harm? Second, *diminish strategies* argue that a crisis is not as bad as the reviewer stated in his/her negative review or that the physician lacked control over the crisis. If a physician lessens his/her connection to the accusation expressed in the negative review and/or readers of the negative review view the crisis less negatively, the harmful effects of the crisis may be reduced. In this case, physicians need solid evidence to support their claims, and even then, this tactic might fail because readers of the negative review may reject the physician's argument and continue to believe the writer of the negative review—whether the review is true or not. Third, *rebuild strategies* attempt to improve the physician's reputation by offering material and/or symbolic forms of aid to the "victim" (i.e., the writer of the negative review). Physicians can do something to benefit (future) patients and thereby take positive actions to offset the crisis. A full apology is a positive reputational action and such a response strategy can be used for crises that present as a severe reputational threat and, theoretically, this can dampen the feelings of anger (see Coombs, 2007).

Situational crisis communication theory provides a list of crisis response strategies that can be categorized into these three categories. Importantly, many of these strategies are more suited to for-profit corporations and thus do not really fit the physician domain. As outlined in detail below, specific response strategies for physicians have been developed based on the theorizing on crisis communication presented above and on practical insights in the form of expert feedback from physicians. Thus, the present study selected specific response strategies from situational crisis communication theory but evaluated the practical relevance from the physicians' perspectives. Thus, the strategies tested in the present study should have both a theoretical foundation and practical relevance. Given that we gathered expert feedback, we discuss the selected strategies below in the methods section.

1.2. Hypotheses and Research Questions

Research on crisis response strategies shows that it often substantially matters as to which specific response strategies are used in a given crisis (Coombs, 2007). Situational crisis communication theory uses responsibility attributions as the conceptual link between a specific crisis and the selection of effective crisis response strategies. In fact, previous research has shown that crisis responsibility is negatively related to organizational reputation (Coombs and Holladay, 1996). However, given that the attribution of responsibility can be ambivalent and relatively difficult to predict in the PRW domain (see above), we hypothesized, on a rather broad level, that different crisis response strategies will elicit different preventive effects on reputational damage (Hypothesis 1). Thus, we conceptualized different crisis response strategies as the independent variable and reputational damage as the dependent variable. In addition, we questioned whether this reparative effect from response strategies would depend on the type of negative review that had been posted online; or stated formally, whether the strength of the reparative effect of a given response strategy would be moderated by the type of negative review (Research Question 1). Type of negative review thus was conceptualized as a potential moderator variable. Available evidence did not allow us to formulate a specific hypothesis regarding possible moderator effects. We thus put this idea into RQ1 and questioned whether the strength of the reparative effect of a given response strategy (see Hypothesis 1) would be moderated by the type of negative review.

We already noted above that anger is also an important outcome, possibly causing patients to lash out at a physician (negative word of mouth) or to sever the patient–physician interaction. For the sake of

completeness, we used anger as a secondary outcome. Similarly to the primary outcome (reputation), we hypothesized that different crisis response strategies would elicit different effects on anger toward the physician (Hypothesis 2) and questioned whether the type of negative review would moderate the size of the response strategies' reparative effect on anger (Research Question 2). We thus conceptualized different crisis response strategies as the independent variable, anger toward the physician as the dependent variable, and type of negative review as a possible effect moderator.

2. Method

We utilized a web-based experiment with a quota-based sample based on age, gender, and education ($N = 1117$) with a 4 (type of patient's negative review) $\times$ 6 (type of physician's response) factorial design, augmented with one standalone comparison control group (i.e., 25 experimental groups). Participants were randomly allocated to one of these groups. Participants allocated to the standalone comparison group read a moderately positive review. We used a moderately positive review in this group because a high number of reviews on PRW paint a rather positive picture of physicians (see above). The content of the reviews and responses were developed based on theorizing on crisis communication, the available content on an Austrian PRW, and expert feedback from physicians in the Austrian Ophthalmological Society to increase relevance in terms of both theory and practice (see details below). Participants read one randomly selected review $\times$ response combination. A sample layout of the stimulus can be found in the Appendix. Afterward, we measured beliefs about the physician, anger, and additional variables.

2.1. Participants

We bought a sample of the general population from a commercial market research institute. Only individuals living in Austria participated in this web-based study (for details on the Austrian Health Care System see Federal Ministry of Labour, Social Affairs, Health and Consumer Protection, 2019). Although we bought the sample from a commercial market research institute, we conducted the experiment by ourselves using the survey tool Qualtrics (Qualtrics International Inc., Seattle, WA). We utilized survey quotas based on age, gender, and education, ensuring a higher diversity of the sample compared to standard convenience sampling techniques. This positively contributes to generalizability of findings (i.e., the extent to which the results of the study can be generalized). In total, 1117 participants provided complete data. Of these, 50% were male and the age ranged from 18 to 77 years ($M = 44.63$, $SD = 16.04$). Approximately half of the sample had no high school diploma (48.3%), 33.1% had a high school diploma, and 18.5% had a university degree.

2.1.1. Experimental manipulation

Types of negative reviews. The first manipulated factor in the factorial design was the type of negative review from the patients. We discussed the available negative reviews from the Austrian PRW Doc-Finder within the research team that includes communication scholars (FA, MF) and a research-experienced medical doctor (OF). Based on real reviews, we wrote negative reviews targeted at a fictious physician. The specific formulations we used to write these were taken from real reviews posted on DocFinder, thus increasing external validity. We did not explicitly specify the physician's branch of medicine. Afterward, we requested expert feedback from physicians in the Austrian Ophthalmological Society (AOS), asked for recommendations related to adjustments based on their subjective experiences, and targeted practical relevance. Note that one co-author (OF) is a member of the AOS, received funding to buy the sample from the commercial market research institute, and asked his colleagues from AOS for expert feedback. We used the following types of negative reviews whose critique

had four different targets: physician's professional incompetence, organizational problems (including long waiting times), physician's unfriendliness, and staff's unfriendliness. The exact wordings (English translations) can be found in Table 1.

Types of response strategies. The second manipulated factor in the factorial design was the types of response strategies made by the physicians. We discussed crisis response strategies provided by situational crisis communication theory (Coombs, 2007) within the research team, targeting a theoretical foundation. Afterward, we requested feedback from physicians in the Austrian Ophthalmological Society, thus ensuring practical relevance and feasibility. The exact wordings we used to write the responses were inspired by real responses posted on DocFinder, thus increasing external validity.

We used the following list of crisis response strategies: *No response* (i.e., physician does not provide a response), *denial* (i.e., the physician asserts that the information provided in the negative review is incorrect), *scapegoating* (i.e., the physician blames other people outside of the organization—the statutory health insurance affords that many patients receive treatment and care, causing physicians to spend less time with individual patients), *attacking the accuser* (or *social bot,* where the physician confronts the reviewer by claiming something is wrong with the critique—In fact, physicians from the Austrian Ophthalmological Society reported to us that they observed that the very same negative

Table 1
Negative reviews.

	Title of all negative reviews: "Very dissatisfied!" by an anonymous user
Physician's professional incompetence	I was very disappointed with Dr. Thomas Kirsch! The treatment was quite rushed and he only took an extremely short glimpse at my eyes. He then wrote me a prescription, but when I reached the pharmacy, I noticed that I am allergic to one of the ingredients (he could have known about this if he had taken a look at my previous medical reports). He did not seem professionally competent. I do not recommend this physician!
Organizational problems	I was very disappointed with Dr. Thomas Kirsch! Even though I had an appointment, I had to spend 1.5 h in an overcrowded waiting room. When I vehemently demanded to be treated, it turned out that the receptionist had somehow gotten my appointment mixed up. After that, I finally got to enter one of the treatment rooms, where I had to wait for almost another 15 min. Bad organization! I do not recommend this physician!
Physician's unfriendliness	I was very disappointed with Dr. Thomas Kirsch. His receptionist was alright, but the doctor himself was quite rude to me. When I entered the treatment room, he did not greet me and just pointed to the chair in front of him instead without even looking at me. Questions about my diagnosis were met with eye-rolling, very curt replies, and he talked to me as if I was a small child. Very unfriendly doctor! I do not recommend this physician!
Staff's unfriendliness	I was very disappointed with Dr. Thomas Kirsch's team. The doctor himself was alright, but his receptionist was quite rude to me. When I entered the practice, she did not greet me and just waved me over in her direction instead without even looking at me. Questions about a follow-up appointment were met with eye-rolling and she only suggested morning appointments even though I pointed out to her that I work full-time. Very unfriendly receptionist! I do not recommend this physician!

Review of the standalone comparison control group.
Title: "I was satisfied!" by an anonymous user.
I was satisfied with Dr. Thomas Kirsch! I was only in his practice for a short amount of time, but the atmosphere in the practice was pleasant. I did not have to wait long and felt that I was in good hands and well-advised during the treatment. The physician and his team seemed alright to me on a personal level as well as professionally. I recommend this doctor!.

review had been posted in an impossibly short time frame simultaneously on the DocFinder pages of several physicians; in theory, these patients had to have visited several ophthalmologists at the same time), and an *apology* (i.e., the physician indicates that he takes full responsibility and asks the patient for forgiveness). We used two variations of this crisis response strategy: *An apology without asking for follow-up communication* and *an apology asking for follow-up communication* in which the physician asks patients to send an e-mail with a more detailed description of the negative event—with the overtly-expressed goal of improving health care in the future. Again, the exact wordings can be found in Table 2.

3. Outcomes

We now report the outcomes. Importantly, there were no missing observations.

Beliefs about the physician. We measured beliefs about the physician (Arendt and Karadas, 2019) as an indicator for reputation. This is a general measure of the valence of the beliefs about a physician and it relies on numerous dimensions: Attitudes toward the physician (e. g., "I have a positive impression of this doctor"), trust and sympathy (e. g., "I trust this doctor"), perceived competence (e.g., "I think this doctor is competent"), intentions to visit the physician (e.g., "If I had the chance, I would go to this doctor"), intended adherence (e.g., "If this doctor recommends something to me, I would do it that way"), and intentions to recommend the physician (e.g., "If my family or friends need a doctor, I would recommend this doctor"). We used two items for each dimension (see Arendt and Karadas, 2019, for a list of items).

Table 2
Physician's Response.

No response	[No response]
Denial	Dear patient, this criticism is incomprehensible for me since the entire team always makes a lot of effort to deal with our patients in a respectful and competent manner both in all treatment steps and on a personal level. This must undoubtedly be a mistake. Best regards, Dr. Thomas Kirsch and team
Scapegoat	Dear patient, sadly it is hardly possible for the entire team to deal with our patients as intensively and personally as we would like to. This is not up to us: Statutory health insurance demands that we treat a lot of patients, leaving little time for individuals. Best regards, Dr. Thomas Kirsch and team
Attack the accuser/social bot	Dear patient, we noticed that your review was also posted on two other ophthalmologists' profiles. Is this possible? Did you visit multiple ophthalmologists' practices in one day so you could evaluate all of them with an identical review? Best regards, Dr. Thomas Kirsch and team
Apology without asking for follow-up communication	Dear patient, the entire team deeply regrets that you had a bad experience in our practice. We ask you to understand that we also have bad days from time to time, so mistakes can happen and you experienced this first-hand despite our efforts. We apologize and will see your review as an opportunity to work on ourselves. Best regards, Dr. Thomas Kirsch and team
Apology alongside asking for follow-up communication	Dear patient, the entire team deeply regrets that you had a bad experience in our practice. We ask you to understand that we also have bad days from time to time, so mistakes can happen and you experienced this first-hand despite our efforts. We apologize and will see your review as an opportunity to work on ourselves. You would really help us out if you could write us an e-mail and describe what happened in more detail so we can do better in the future. Best regards, Dr. Thomas Kirsch and team

Participants rated each item on a 7-point scale ranging from *strongly disagree* (coded as 1) to *strongly agree* (coded as 7). A factor analysis confirmed that there was one latent factor underlying the 12 items, which explained 71.34% of the variance. We calculated the mean across all items. A higher score indicates more positive beliefs about the physician and thus a higher reputation ($M = 3.68$, $SD = 1.37$, $\alpha = 0.96$). This is the primary outcome of the present study.

Anger toward the physician. As a secondary outcome, we measured anger toward the physician. Participants were asked if they were made angry by reading the negative reviews. We used two items ("I get angry about this doctor," "This doctor makes me angry") from previous research (Arendt and Karadas, 2019). Participants rated these items on a 7-point scale (1–7). To confirm that anger was a separate factor, we calculated a factor analysis with varimax rotation with the 12 items from the reputation measure (beliefs about the physician) and the two items from this anger measure (i.e., a total of 14 items). A two-factor solution emerged: The first factor accounted for 54.33% of the variance after rotation and the second factor accounted for 14.97% of the variance after rotation. Factor loadings indicated a clear pattern: The 12 reputation items showed strong loadings on the first factor and the two anger items showed strong loadings on the second factor, confirming that reputation and anger are different constructs. Higher scores on the anger measure, calculated as the mean of both items, are indicative of more anger being felt by the participants toward the physician ($M = 3.05$, $SD = 1.65$, $\alpha = 0.83$).

Of note, we performed all analyses with the mean scores. However, we re-ran the models reported below with the factor scores. This analysis provided very similar results. This analysis can be obtained upon request.

Subjective evaluation of the physician's response. For an additional analysis, we measured how participants subjectively evaluated the physician's response. We asked participants: "Please think about the physician's response to the review: How do you perceive his reaction?" Participants were asked to rate a total of eight items (e.g., "The doctor takes patients seriously," "The doctor reacts well," "His reaction increases my trust in this doctor."). Higher scores indicate a more positive evaluation of the physician's response ($M = 3.05$, $SD = 1.65$, $\alpha = 0.83$).

3.1. Ethics statement

Ethical approval for this study was obtained from IRB-COM, University of Vienna (dated November 13, 2019).

4. Results

4.1. Preliminary analysis

In a first step, we had to ensure that negative reviews increased the negativity in beliefs about the physician. This is the prerequisite that allows us to test whether the physician's response can dampen or even eliminate the negative effect of negative reviews. We used a one-factorial analysis of variance (ANOVA) with the type of negative review as a between-subjects factor. For this analysis, we only used experimental conditions without a physician's response to test whether negative reviews *per se* elicited a negative effect on beliefs about the physician. A significant main effect was obtained, $F(4, 218) = 26.29$, $p < .001$, $\eta^2 = 0.33$. As indicated by non-overlapping confidence intervals (CIs) with the standalone comparison control group, all four negative review groups were significantly different in reputation from the control group: Control, $M = 4.84$, $SD = 1.28$, 95% CI [4.45, 5.21]; physician's professional incompetence, $M = 2.35$, $SD = 1.18$, 95% CI [2.03, 2.71]; organizational problems, $M = 3.80$, $SD = 1.14$, 95% CI [3.46, 4.14]; physician's unfriendliness, $M = 2.89$, $SD = 1.26$, 95% CI [2.55, 3.26]; staff's unfriendliness, $M = 3.86$, $SD = 1.39$, 95% CI [3.48, 4.24]. Apparently, negative reviews that focused on the professional incompetence and unfriendliness of the physician himself (versus

organizational problems and the unfriendliness of his/her staff) elicited the most negative effects on reputation. The fact that negative reviews elicited reputational damage allowed us to test whether the physician's response would dampen or even eliminate the detrimental effects of negative reviews.

4.2. Main analysis

Reputation. Hypothesis 1 predicted that the physician's response would elicit a significant effect on beliefs about the physician and Research Question 1 asked whether the strength of the reparative effect of a given response strategy would be moderated by the type of negative review. We utilized a factorial ANOVA with type of negative review and type of physician response as the between-subjects' factors. The main effect of the type of physician response tests hypothesis 1 and the interaction effect can be used to answer Research Question 1. The findings are visualized in Fig. 1A. Although this figure also includes the standalone comparison control group (control), this group was not included in the factorial ANOVA. Thus, this analysis was calculated without the standalone comparison control group. Nevertheless, we also show the mean (and 95% CI) of the standalone comparison control group in the figure for ease of visual access.

Consistent with the findings from the (univariate) preliminary analysis, there was a main effect of type of negative review, $F(3, 1049) = 35.88$, $p < .001$, $\eta^2 = 0.09$. More importantly, the type of physician response elicited a main effect as well, $F(5, 1049) = 17.86$, $p < .001$, $\eta^2 = 0.08$, supporting hypothesis 1. Note that the strength of the effects of negative reviews and response strategies were similar: The analysis indicated that around 9% of the variance is associated with the type of negative review and about 8% of the variance is associated with the response strategy, emphasizing the importance of how physicians react to negative reviews on PRWs.
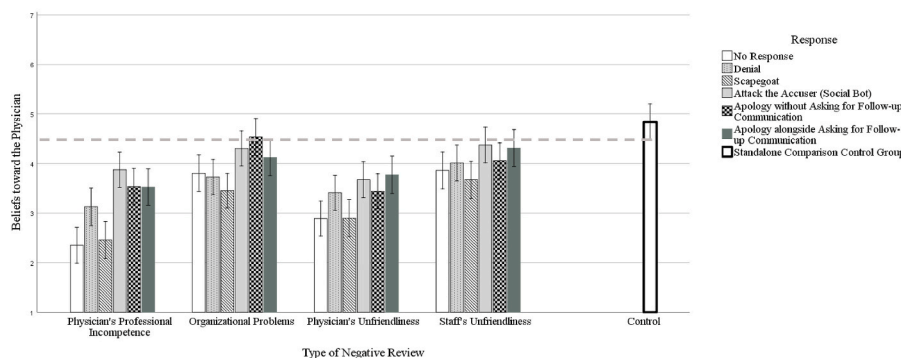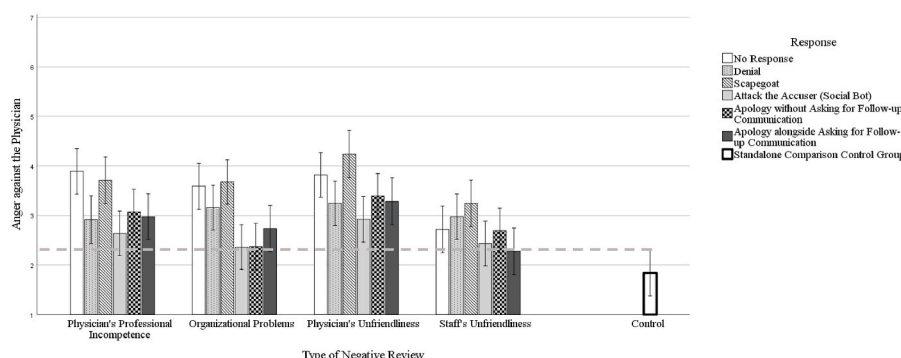
The figure shows that an apology (asking for or without asking for follow-up communication) and attacking the accuser/social bot were the most effective response strategies. In fact, these response strategies were able to substantially dampen the negative effects on beliefs about the physician. Conversely, no response and scapegoating elicited worse outcomes. Denial also elicited a suboptimal outcome.

Answering Research Question 1, there was no significant interaction effect, $F(15, 1049) = 1.41$, $p = .133$, $\eta^2 = 0.02$ in the factorial ANOVA described above. This indicates that the effect from the type of response did not depend on the type of negative review. Thus, the analysis indicates that whereas it mattered how the physician reacted to the negative review, the type of response did not elicit significantly different effects for different types of negative reviews—response strategies such as an apology seem to elicit "across the board" effects on reputational protection. Therefore, the strength of the reparative effect of a given response strategy was not moderated by the type of negative review.

Anger. Anger was used as a secondary outcome. We predicted that different crisis response strategies would elicit different effects on anger against the physician (Hypothesis 2) and we questioned whether response strategies would elicit different effects depending on the type of negative review (Research Question 2). Note that from the perspective of the physician, a lower score (i.e., less negative emotional reactions) is desired. Consistent with the reputation-related analyses reported above, we used a factorial ANOVA with anger against the physician as the outcome. The standalone comparison control group was not used in this analysis. There were significant main effects from the type of negative review, $F(3, 1049) = 11.24$, $p < .001$, $\eta^2 = 0.03$, and the type of physician response, $F(5, 1049) = 13.48$, $p < .001$, $\eta^2 = 0.06$. However, there was no significant interaction effect, $F(15, 1049) = 1.06$, $p = .392$, $\eta^2 = 0.02$. As can be seen in Fig. 1B, there was a similar effect pattern as we obtained for the primary outcome of reputation (beliefs about the physician, visualized in Fig. 1A): Apology (asking for or

A. <u>Reputation (Beliefs about the physician)</u>

B. <u>Anger (Negative emotion)</u>

Fig. 1. Reputational damage (A) and anger (B): Testing whether response strategies can prevent reputational damage and reduce anger-related emotional reactions. The means in this figure are based on $N = 1117$ participants. Error bars represent confidence intervals (95%). This figure also includes the standalone comparison control group (control). However, this group was not included in ANOVA models. The horizontal dashed line represents the lower (A) or upper (B) limit of the control group's confidence interval.

without asking for follow-up communication) and attacking the accuser/social bot showed the most beneficial outcomes. No response and scapegoating elicited worse outcomes. Denial elicited ratings in between the other response types. Due to the absence of a significant interaction effect, the strength of the reparative effect of a given response strategy was not moderated by the type of negative review.

4.3. Additional analysis

Although beliefs about the physician were the primary outcome of the present study, we also measured the participant's overtly-expressed subjective evaluation of the physician's response. This outcome represents whether readers of PRWs (and thus future potential patients) think that the physician responded appropriately. Thus, this outcome does not measure actual effects of the PRW content (negative reviews) but provides a reader's subjective rating of the physician's response. Even if this additional outcome does not measure actual media effects, it can help to paint a more nuanced picture of response strategies' impact.

To test this additional idea, we reran a factorial ANOVA with a subjective evaluation of the physician's response as the outcome. This analysis supports the conclusions drawn above: Although there were significant main effects from the type of negative review, $F(3, 1049) = 9.02, p < .001, \eta^2 = 0.03$, and the type of physician response, $F(5, 1049) = 66.87, p < .001, \eta^2 = 0.24$, there was no significant interaction effect, $F(15, 1049) = 1.43, p = .125, \eta^2 = 0.02$. Fig. 2 visualizes the pattern that emerged: An apology (asking for or without asking for follow-up communication) and attacking the accuser/social bot showed the most beneficial ratings. Again, no response, scapegoating, and denial elicited worse outcomes. These findings from the additional analysis are consistent with findings on reputation and anger reported above.

5. Discussion

Patients are increasingly turning to PRWs and often rely on the available reviews before choosing physicians. Some of these reviews are negative and were possibly written by disgruntled patients to vent their frustration, partly over minor shortcomings. As previous research and the present study show, such negative comments pose a threat to the physician's reputation. Unfortunately, little is known about how physicians can effectively respond to negative reviews and whether the use of different response strategies would elicit different outcomes—It is important to know whether specific response strategies can prevent reputational damage. Replicating previous research (Li et al., 2015), the

participants who read negative reviews showed more negative beliefs about the physician. Interestingly, negative reviews targeting the physician (professional incompetence and unfriendliness) elicited the strongest reputational damage. From the perspective of situational crisis communication theory (Coombs, 2007), we interpret this finding such that readers of negative reviews attributed crisis responsibility to the physician himself/herself more strongly when the physician himself/-herself was the target of the critique (compared to organizational processes or his/her staff).

5.1. Evidence-based action recommendations

As already noted, evidence-based action recommendations for physicians should be supported by scientific evidence from empirical research rather than being based on personal preferences and unscientific experience (Coombs, 2007; Rousseau, 2006). The present study is the first to provide empirical evidence for the effectiveness of response strategies, allowing us to formulate evidence-based action recommendations, describing how physicians can maximize reputational protection when being confronted with (possibly unjustified) negative reviews.

Confirming that it substantially matters how physicians react to negative reviews, specific physician responses were able to dampen the detrimental impact of negative reviews. In fact, our findings provide insights into how physicians can effectively deal with negative reviews on PRWs. The use of specific response strategies can prevent reputational damage. We found that an apology response strategy appeared to be most effective. In fact, rebuilding strategies such as apologies are used for crises that present with a severe reputational threat and can dampen feelings of anger (see Coombs, 2007). We observed that the negative reviews elicited reputational damage (beliefs about the physician) and stimulated anger (emotional reaction toward the physician). An apology was able to dampen this negative impact on reputation and anger in a substantial way. Of note, an apology provides a form of aid to the "victim" (i.e., the patient and writer of the negative review) and focuses on doing something to benefit (future) patients and thereby taking positive actions to offset the crisis. Given that the apology strategy appeared beneficial on all outcomes tested in the present study, we recommend using apologies as the default response strategy.

Of course, our evidence-based action recommendation to use apologies as the default only holds when reviews are based on real events. For example, we received expert feedback from physicians who reported that they observed that the very same negative review had been posted in an impossibly short time frame simultaneously on the PRW profiles of
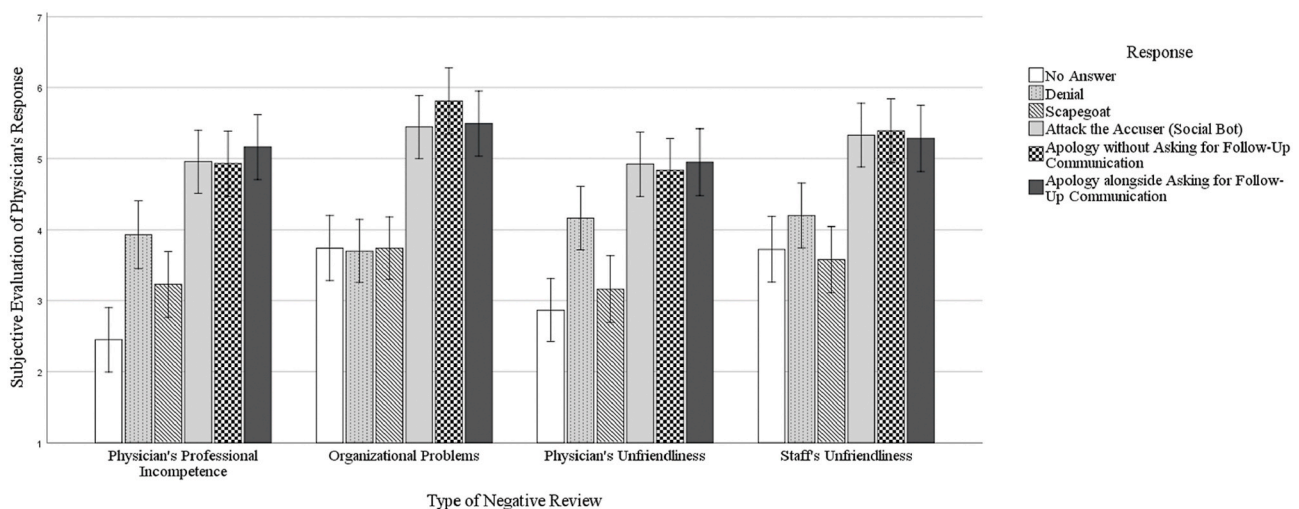

Fig. 2. Subjective evaluation of the physician's response: Testing whether participants evaluated response strategies differently. The means in this figure are based on $N = 1073$ participants (i.e., without the standalone comparison control group; subjective evaluations were not measured for these participants). Error bars represent confidence intervals (95%).

several physicians—this patient had to have visited several ophthalmologists on the same day, which is an unlikely event. Therefore, it is clear that the person writing the reviews did not base his/her critique on actual events. Importantly in this regard, we tested the attack the accuser/social bot strategy and found it to be effective. However, effectiveness depends on whether the readers of the negative review accept the physician's perspective. Thus, the *attack the accuser* strategy may elicit a detrimental outcome if readers of the negative review reject the physician's argument and continue to believe the writer of the negative review. In the present study's "social bot" context, such a strategy appeared to work. However, physicians as crisis managers have to carefully deliberate over whether the specific context allows for the use of the attack the accuser strategy.

Giving no response, scapegoating, and denial elicited worse outcomes. Denial strategies attempt to remove any connection between the physician and the content of the negative review and scapegoating strategies blame others. Again, effectiveness likely depends on whether or not the readers accept the physician's argument in the response message. For the PRW context, evidence of the present study paints a straightforward picture: Especially scapegoating and no response appeared to be ineffective crisis response strategies. Therefore, we cannot recommend physicians adopting them by default.

Given that patients are increasingly turning to PRWs and negative reviews can elicit reputational damage, PRWs should be the focus of physicians' attention. The good news for physicians is that the use of an adequate crisis response strategy (e.g., an apology) can prevent reputational damage. The bad news is that the *no response* strategy—which is the least resource-intensive strategy—elicited worse outcomes. The *no answer* strategy was apparently also perceived as a kind of answer by the participants of the present study, implicating that, from a strategic communication perspective, physicians should definitely focus their attention on PRWs. Lack of interest in PRWs or even a deliberate decision to avoid them does not seem to be an effective strategy. Admittedly, responding to negative reviews costs resources such as time, which is a limited resource for physicians. However, given that many physicians have only a few reviews annually, the act of responding to negative reviews seems to be feasible. The present study provides some sample formulations (see Tables 1 and 2), thus simplifying the response process for physicians. The danger of reputational damage and anger expressed by past patients and their possible transmission to potential new patients (i.e., readers of the negative reviews) is high.

5.2. Moral dimension and ethical responsibility

One can argue that findings of the present study can (1) assist physicians in managing reputational damage caused by unwarranted negative reviews or (2) assist physicians in managing all negative reviews, including those that are warranted. This idea has a moral dimension: Is it ethically responsible to manage a crisis when the crisis is self-inflicted? Importantly, the first priority for physicians should be to protect patients from harm (see Coombs, 2007). According to our view, it would be irresponsible to begin crisis communication by strategically focusing on the physicians' reputation. Conversely, in the first step, physicians should deliberate over the negative review, scrutinize it, challenge their established procedures, and possibly adapt their behavior with the overarching goal of protecting future patients from a similar crisis. Thus, it is important to elaborate on the question whether or not the criticism outlined in the negative review is at least partly justified: We already noted that critics of PRWs worry that PRWs can be a forum for disgruntled patients to vent their frustration, partly over minor shortcomings and that some undampened reviews filled with hatred may be written without them having any actual basis in terms of the real physicians' behavior. However, it should be assessed whether frustration and disgruntlement have any actual basis: Is there a kernel of truth? It is only after this initial stage that crisis-managing physicians should turn their attention to reputational assets. The present study

provides evidence-based guidance for the prevention or repair of reputational damage. When ethical responsibilities are met, however, response strategies can be chosen depending on their effectiveness.

5.3. Limitations

This study has several limitations. First, we tested the effectiveness of physician responses to one isolated, single negative review. In the real world, PRWs often provide more than one review for a given physician. There may be only positive reviews, only negative reviews, or "competing review environments" (i.e., positive and negative reviews). The present study did not investigate how response strategies work in these more complex review environments. This is a valuable starting point for a follow-up study. Second, we used a negative review for a fictitious physician. Thus, participants had no prior beliefs that had already been formed for this physician: Prior (positive) experiences with a real physician may protect him/her from the negative impact of negative reviews—a pattern that would be consistent with predictions outlined in situational crisis communication theory (Coombs, 2007). Again, this is up to a future study. Third, although we operationalized the "beliefs about the physician" concept in a broad sense as an indicator of reputation, we relied upon self-report measures. For example, this measure included items related to self-reported behavioral intentions (e. g., the willingness to use the physician's services or to recommend the physician to friends) and we did not measure actual behavior (e.g., whether patients actually use the physician's services or recommend the physician to friends). However, intentions are a significant predictor of actual behavior and thus can be used as a proxy (Fishbein and Capella, 2006). Fourth, we developed the content of the reviews and responses based on available theorizing on crisis communication (Coombs, 2007), practical insights from expert feedback from physicians in the Austrian Ophthalmological Society, and available content posted on an Austrian PRW to increase relevance in terms of both theory and practice. Nevertheless, we only tested a total of six different response strategies. Other strategies could be even more effective, and it must be added that there may be strategies that are even worse than the *no response* and *scapegoat* strategies tested in the present study. Again, this holds potential for a future study. Fifth, we did not use random sampling techniques. Thus, the sample can not be deemed representative for the Austrian population. However, we relied on quota-based sampling which positively contributes to the diversity of the sample (compared to convenience sampling techniques). Although we relied on age, gender, and education as quota variables, there may be other important variables such as income or occupation that were not used as quota variables.

6. Conclusions

Despite the limitations, the present study provides evidence emphasizing the importance of using an effective response strategy. The analysis indicates that physicians can substantially influence (future) patients' beliefs and emotional reactions. Assuming that some of the negative reviews were written by disgruntled patients to vent their frustration, partly over minor shortcomings, it seems to be important, even for the "best" physicians, to know how strategic communication can be used to dampen the detrimental reputational impact of negative reviews. Using adequate response strategies may likely maximize reputational protection without any huge financial costs—by simply enacting non-time-consuming crisis communication. Physicians only need to know which strategy is effective and which strategies could elicit worse outcomes. The present study provides this knowledge.

Acknowledgments

research institute.

Appendix

Sample layout of a stimulus including a patient's negative review (above) and a fictitious physician's response (below):

Data statement

Data were collected via a web-based study. The data are saved as an SPSS file and can be obtained upon request.

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